REMARKS

I. Status Of The Claims

Claims 1-19, 21-26, 29, 31-53, and 55-67 are pending. Claims 20, 27, 28, 30, and 54 are cancelled. Claims 1, 25, 29, 31-50, 52, 53 and 55-67 have been amended herein to recite, in the case of method claims, a casting process, or in the case of product claims, a cast product. Support for these amendments can be found throughout the specification and claims as originally filed. Specifically, support for the above amendments can be found, for example, at paragraphs [011] and [017] of the as-filed specification. Thus, these amendments raise no issue of new matter.

II. Rejection under 35 U.S.C. §102(b)

Claims 1-67 stand rejected under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 6,214,437 to Beall et al. (hereafter, "Beall"), for the reasons disclosed at pages 2 and 3 of the Office Action. As claims 20, 27, 28, 30, and 54 have been cancelled herein, the portion of the rejection pertaining to these claims is moot. Insofar as the Examiner's rejection applies to claims 1-19, 21-26, 29, 31-53, and 55-67, Applicants respectfully disagree with and traverse this rejection for at least the following reasons.

To establish a rejection under 35 U.S.C § 102, the Examiner must demonstrate that the reference teaches each and every claim limitation. *See* M.P.E.P § 2141. A claim is anticipated under § 102 only if each and every element, as set forth in the claim, is found in a single prior art reference. M.P.E.P. § 2131. In view of this burden, Applicants respectfully traverse and disagree with this rejection for at least the following reasons.

a. Rejection Pertaining to Method Claims 1-19, 21-26, and 46-51

As amended herein, claims 1-19, 21-26, and 46-51 recite, *inter alia*: a) a method of making a ceramic body comprising *casting* (claims 1-19); b) a method of modifying/increasing the *casting* rate of a *cast* body (claims 21-26); or c) a method of modifying/increasing the filtration rate of a *cast* ceramic body filter cake (claims 46-51). In other words, claims 1-19, 21-26, and 46-51 all recite, in one fashion or another, a method employing a casting process.

Beall, however, teaches a honeycomb ceramic material made by sintering a mixture of calcined kaolin clay, a binder, and 10.6% or 18.5% mullite. Beall, column 5, lines 12-16, and Table IV, examples 10c-22. Further, Beall teaches that prior to sintering, the mixture of kaolin and binder is ***extruded***. *Id.* (emphasis added). Beall does not teach or suggest any method of making a ceramic material via casting, as claimed. Indeed, Applicants note that Beall is completely silent with respect to a method for making a ceramic material via casting.

Applicant's submit that Beall's failure to teach or even suggest a method of manufacturing a ceramic material utilizing a casting step constitutes a clear failure of the reference to teach all of the limitations of claims 1-19, 21-26, and 46-51, as amended herein. As Beall does not teach all of the limitations of these claims, there can be no anticipation under 35 U.S.C. §102. Accordingly, Applicants submit that the Examiner's rejection of claims 1-19, 21-26, and 46-51 under 35 U.S.C. §102(b) as anticipated by Beall is improper, and respectfully request that it be withdrawn.

b. Rejection Pertaining to Product Claims 29, 31-45, 52, 53, and 55-67

As amended herein, claims 29, 31-45, 52, 53, and 55-67 recite, *inter alia*, a cast product, such as a filter cake or ceramic ware product. In contrast, Beall only teaches a ceramic product manufactured via ***extrusion***. Beall, column 5, lines 12-16, and Table IV, examples 10c-22 (emphasis added). Beall does not teach or even suggest a *cast* ceramic product, as recited in the present claims. In view of the differences in the manner by which the claimed product and the products recited in Beall are manufactured, Applicants respectfully submit that the Beall reference fails to teach all of the limitations of claims 29, 31-345, 52, 53, and 55-67, as amended herein. More specifically, Applicants respectfully submit that one of ordinary skill would expect a ceramic product formed by casting to exhibit distinctive structural characteristics when compared to a ceramic product formed via extrusion, as discussed below.

It is known that platy particles, such as talc and kaolinite, will assume a preferred orientation during certain forming processes. Other anisotropic particles, such as rods and fibers, may also be oriented.

With the above in mind, Applicants note that during extrusion, a die is provided having one or more channels through which the material to be extruded (the extrudate) is forced.[1] When the extrudate is forced through the die, it is necessarily exposed to large shearing forces, increased temperature, and increased pressure. These forces are known to impact the structural characteristics of the extruded product. For example, during the extrusion of a clay mass to form a solid brick, considerable shearing force is applied at the clay mass/mold interface. The magnitude of this shearing force on the clay mass is highest at the interface between the mold and the clay mass, and decreases with distance from the interface to the center of the mass. As a result, the exterior of the brick resulting from this process will be substantially oriented in the machine direction (the direction in which the extrudate travels through the die, typically parallel to the long axis of the extruded product), relative to its interior. Unlike the extrusion of a brick, however, when a honeycomb body, such as that disclosed by Beall, is formed by extrusion, most of the volume of the extrudate is in close proximity to a die face. As a result, substantially all of the extruded honeycomb structure will be oriented.

---

[1] A description of the extrusion of ceramics, and the resultant orientation that imparted by extrusion, can be found, for example, in United States Patent No. 3,885,977 to Lachman et al. (Lachman). The process disclosed in Lachman is analogous to process disclosed in the Beall reference cited by the Examiner. Applicants note that Lachman specifically teaches that this process results in the orientation of clay particles in the resultant ceramic material. *See* Lachman, column 5, lines 5-11 and column 10, lines 24-51. *See also* column 1, lines 39-47 of U.S. Patent No. 4,385,129 to Inoguchi et al. (stating that extrusion forming may be used to orient clay particles in ceramic materials.).

Casting processes, such as slip casting, do not necessarily impart the increased temperature, pressure, and shearing forces intrinsic to extrusion. Indeed, even if these forces are utilized during casting, they do not necessarily have the same effect as when applied during extrusion. For example, in slip casting, a mold of a desired shape is provided, into which a fluid suspension of a body (slip) is provided. The mold then progressively extracts the fluid (i.e. water) from the body until a solid is formed. *See* specification, paragraph [005]. As one skilled in the art would appreciate, during such a casting process, particles do not necessarily orient uniformly.

In contrast, due to the high shearing forces intrinsic to the extrusion process, one of ordinary skill would expect an extruded honeycomb ceramic, such as that disclosed by Beall, to be substantially oriented. Applicants submit that one of ordinary skill in the art would expect a casting process to impart distinctive structural characteristics and properties than when compared to more oriented products made via extrusion.

Indeed, as known in the art, and in further support of the foregoing, ceramics are often processed in a manner to achieve certain properties. For example, as shown in U.S. Patent No. 3,885,977 to Lachman et al. (Lachman), ceramics containing relatively few oriented particles (such as those formed by isostatically pressing random packed powders) typically exhibit a more uniform coefficient of thermal expansion than ceramics having oriented particles (such as those formed by extrusion). *See* Lachman, column 6, lines 50-62 (stating that ceramics having oriented particles exhibit higher or lower then normal coefficient of thermal expansion in the direction normal to a set axis/plane within the crystalline ceramic body).

Further, while Applicants acknowledge that it ***may*** be possible to produce a product having the same properties via casting or extrusion, the simple fact that two processes ***can*** form the same product is not indicative that they ***will*** form the same product. Given the substantial differences between extrusion and casting discussed above, and absent some teaching otherwise, one of ordinary skill in the art would not expect an extruded product to necessarily exhibit the same properties as a cast product.

Thus, in view of the substantial differences between products produced by casting and products produced by extrusion discussed above, Applicants submit that Beall cannot be considered to teach all of the limitations of present claims 29, 31-45, 52, 53, and 55-67. Accordingly, Applicants submit that the rejection of these claims under 35 U.S.C. §102(b) as anticipated by Beall is improper, and respectfully request its withdrawal.

II. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

Dated: January 9, 2006

By: */Louis Troilo/*
Louis M. Troilo
Reg. No. 45,284